DOE/ID-10771
Revision 3

U.S. Department of Energy
Idaho Operations Office

Operation and Maintenance Plan for INTEC Operable Unit 3-13, Group 1, Tank Farm Interim Action

April 2005

Idaho Completion Project

DOE/ID-10771
Revision 3
Project Nos. 020978 and 023614

Operation and Maintenance Plan for INTEC Operable Unit 3-13, Group 1, Tank Farm Interim Action

April 2005

Prepared for the
U.S. Department of Energy
DOE Idaho Operations Office

ABSTRACT

This Operation and Maintenance Plan describes the activities required to inspect, monitor, and maintain the items installed during performance of the Waste Area Group 3, Operable Unit 3-13, Group 1, Tank Farm Interim Action at the Idaho Nuclear Technology and Engineering Center. This plan addresses inspection and monitoring activities for the surface-sealed areas, concrete-lined ditches and culverts in and around the tank farm, a lift station, and the lined evaporation pond. These activities are intended to assure that the interim action is functioning adequately to meet the objectives stated in the Operable Unit 3-13, Record of Decision for the Group 1, Tank Farm Interim Action and as stated by the Agreement to Resolve Dispute, which was issued in March 2003.

CONTENTS

FIGURES

ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DOE	Department of Energy
DOE-Idaho	Department of Energy Idaho Operations Office
FFA/CO	Federal Facility Agreement and Consent Order
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
O&M	operation and maintenance
OU	operable unit
ROD	Record of Decision
TFIA	Tank Farm Interim Action
WAG	waste area group

Operation and Maintenance Plan for INTEC Operable Unit 3-13, Group 1, Tank Farm Interim Action

1. INTRODUCTION

This site-specific Operation and Maintenance (O&M) Plan describes the activities and procedures required to inspect, monitor, and maintain the items that have been installed during performance of the Waste Area Group (WAG) 3, Operable Unit (OU) 3-13, Group 1, Tank Farm Interim Action (TFIA). These include the following:

- Concrete-lined ditches and culverts in and around the tank farm extending to the evaporation pond (Figure 1-1)
- Olive Avenue Lift Station (CPP-1792)
- Evaporation pond with double liner, perimeter fencing, and leak detection system (Figure 1-1)
- Asphalt coverings over selected areas within 150 ft of the tank farm (150-ft control zone)
- Asphalt surface-seal over release Sites CPP-28, -31, and -79 in the tank farm (Figure 1-1)
- Drainage system from the surface-sealed areas to the concrete-lined ditches.

The concrete-lined ditches and culverts are designed to receive and transport storm water run-off from the tank farm and surrounding area to the evaporation pond. In addition, as stated in Section 11.1.1 of the OU 3-13 Record of Decision (ROD) (DOE-ID 1999), the evaporation pond was "...constructed and used as a best management practice to reduce infiltration in the INTEC area." In light of this best management practice, waters have been identified that could contribute to the transport of contaminants to the perched water. Where possible, these waters will be diverted to the evaporation pond in lieu of being discharged to the ground and potentially contributing to the perched water in the proximity of the tank farm. The types of waters and restrictions for discharging into the lined ditches and culverts are detailed in Section 2.6, Diverted Water to the Evaporation Pond.

Inspection, monitoring, and maintenance activities are anticipated to continue until the final remedy for OU 3-14 Tank Farm Soil and Groundwater is completed. The OU 3-13 ROD (DOE ID 1999) deferred a final remedy for Group 1 to a separate ROD that is designated OU 3-14. This deferment was based on the limited information available and the need to gather additional information to select a final remedy. The OU 3-14 ROD for the tank farm will be prepared following further investigations and the development of the OU 3-14 remedial investigation/feasibility study. Inspection, monitoring, and maintenance are intended to assure functionality of the interim action as stated in the OU 3-13 ROD and as altered by the Agreement to Resolve Dispute (DOE 2003). The interim actions included the following:

- Restricting access to control exposure to workers and prevent exposure to the public from soils at the tank farm until implementation of the final remedy under OU 3-14
- Accommodating a one in 25-year, 24-hour storm event with surface water run-on diversion channels

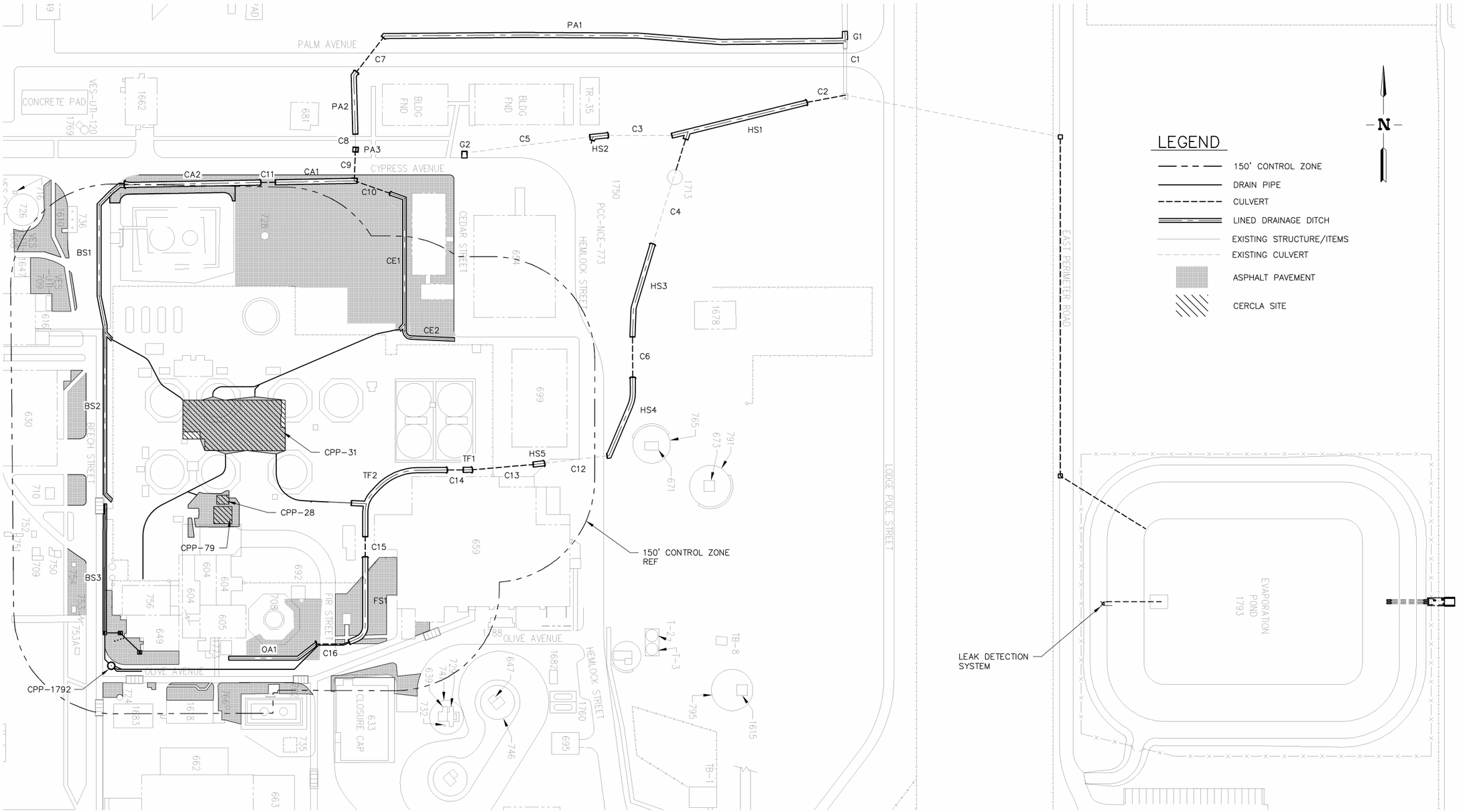


Figure 1-1. Location of TFIA O&M activities.

- Minimizing precipitation infiltration over the release Sites CPP-28, CPP-31, and CPP-79 by placing an infiltration barrier over these sites sufficient to divert at least 80% of the average annual precipitation from the selected release sites.

The activities encompassed by this plan include routine inspections of the tank farm surface-sealed areas, control zone asphalt-paved areas, the storm water collection system (concrete-lined drainage ditches, culverts, and the lift station), as well as monitoring the evaporation pond, liner integrity, and equipment/material maintenance. These inspections, described in Section 3, are performed using the checklists provided in the appendixes of this plan.

Revisions to this O&M Plan will be performed, as necessary, in accordance with Section 8.22 of the Federal Facility Agreement and Consent Order (FFA/CO) (DOE-ID 1991).

2. INSPECTION, MONITORING, SURVEY, AND MAINTENANCE

Inspection, monitoring, and maintenance activities are performed for the tank farm surface-sealed areas, control zone asphalt-paved areas, the storm water collection system (concrete-lined drainage ditches, culverts, and the lift station), and the evaporation pond as detailed below. Forms used for the system inspections identifying the frequency and focus of the inspection are provided in Appendix A. The information obtained during each inspection, along with recommended corrective actions, are recorded on the inspection form.

These inspections and frequencies are provided in the appendixes of this document. When the repair or replacement is performed, it will be noted on the "Comments/Recommended Repair" portion of the previous inspection form. The notation will provide a comment for the repair or replacement performed, date completed, signature of the individual performing the notation, and dated photographs, if applicable.

Contingency inspections (unscheduled, situation-unique inspections performed upon direction of the facility manager) will be conducted when it has been determined that operational integrity of the system has been or may be threatened. Events that might trigger contingency inspections include severe rainstorms, floods, or highly unusual events such as tornadoes and earthquakes. The reporting requirements for inspections and maintenance activities are discussed in Section 3.

Standard O&M procedures for the TFIA equipment are integrated into the Idaho Nuclear Technology and Engineering Center (INTEC) documentation to provide proper maintenance for operation. In addition, corrective maintenance of equipment and systems will be performed. Corrective maintenance primarily consists of unplanned repairs or replacement of system components after they have failed. Examples could be worn-out pumps, leaky pipes, damaged concrete or asphalt, and malfunctioning electronic equipment. If a failure occurs, the system will be evaluated to determine if there is an alternative operating configuration, what the possible cause is, and what actions should be taken to correct the problem. The appropriate maintenance activities will then be performed.

Other organizations may assess portions of the TFIA system and those assessments are not specified in this O&M Plan. For example, the Radiological Control personnel, in accordance with Idaho National Laboratory (INL)[a] radiological monitoring and control policies, monitor areas at INTEC for radiological contamination or changes in conditions. The focus, frequency, and method of this monitoring are identified by the INTEC Radiological Control supervisor, in accordance with the requirements of 10 CFR 835.401 and 10 CFR 835.1102, as implemented at the INL in PRD-183. If assessments performed by Radiological Control personnel identify new or additional controls due to radiological conditions, that information will be identified on the applicable inspection form.

2.1 Tank Farm Surface-Sealed Areas

Tank farm surface-sealed areas (Figure 1-1) will be inspected, as identified in Appendix A, for cracks and potholes having the potential to compromise the integrity of the infiltration barrier. In addition, the associated drainage piping will be inspected for functionality to ensure that there is a seal between the asphalt area and the discharge pipe and that there is no visible blockage of the discharge pipe. Filter socks located at the end of each drainpipe will be inspected to verify they are in place and are not obstructed by debris. They will be replaced as necessary. When the areas to be inspected are snow-covered, inspections will not be performed for cracks, potholes, and seals (i.e., snow will not be removed to inspect the

a. Beginning February 1, 2005, the name of the Idaho National Engineering and Environmental Laboratory (INEEL) was changed to Idaho National Laboratory (INL). The Idaho Completion Project (ICP) is the name of the project that is performing remediation work at the Idaho National Laboratory.

surface underneath). Rather, the inspections will focus on ensuring that discharge piping is available for drainage discharges (i.e., not blocked by debris).

Noted cracks or potholes in the surface-sealed areas and deficiencies in the surface water drainage system will be repaired expeditiously. A standing preventative maintenance work order shall be maintained to perform needed repairs deemed necessary to maintain the integrity of the surface seal and drainage system. The work order is typically a construction work order or can be attached to an associated contract with a paving contractor. Cracks or deficiencies potentially causing drainage to the subsurface are to be repaired no later than 30 days after discovery. If an unusual circumstance prevents the repair of a crack within 30 days, the Agencies will be notified prior to the end of the 30 days and provided the information concerning the rationale for the delay and the planned timeframe when repairs will be performed. Appendix B discusses crack classifications and gives illustrations of each.

Repairs will be conducted using commercially available asphalt repair materials (e.g., asphalt chuck filler and asphalt crack filler). Temporary repairs, as needed, will be conducted and maintained until final repairs can be performed in coordination with INTEC facility asphalt maintenance and other activities and as weather and working conditions allow.

2.2 Control Zone Asphalt-Paved Areas

Asphalted areas within the 150-ft control zone (Figure 1-1) will be inspected as identified in Appendix A. The required asphalt-paved areas located within the control zone are expected to be penetrated or otherwise disturbed during construction or facility maintenance/repair activities (e.g., cathodic protection repair, utility maintenance and repair). These affected asphalt-paved areas are to be repaved and restored to original conditions as part of the maintenance/repair activities. The information obtained during inspections of the areas required to be asphalted, along with any noted recommended corrective actions, will be recorded on the inspection form.

2.3 Water Collection System Ditches and Culverts

Concrete-lined ditches and culverts associated with the storm water collection system will be inspected as identified in Appendix A. The inspections will entail visually inspecting these areas (see Figure 1-1) to assure that (a) the ditches, culverts, and discharge areas are free of sediment and debris that could prohibit run-off to the evaporation pond and (b) the integrity of the ditches and culverts are intact.

Required repair and maintenance activities shall be performed under the INTEC facility work control system. Deficiencies that prevent the distribution of collected water to the evaporation pond shall be addressed expeditiously. The ability to allow water to flow to the evaporation pond shall be maintained at all times.

2.4 Lift Station

The lift station will undergo inspections and surveys at intervals identified in Appendix A. A visual inspection shall include observing and documenting the condition of the system's pumps, piping, slide rails, water level, hatch doors, and control panel.

A system check shall be performed on the lift station components annually and immediately following repairs and upgrade activities to assure proper equipment operation. Appendix C contains the details for each system check. The information obtained during these inspections and surveys, along with any noted recommended corrective actions, will be recorded on the inspection form.

Required repair and maintenance activities shall be performed under the INTEC facility work control system. Deficiencies that prevent the normal operation of the lift station shall be addressed expeditiously. Pump maintenance shall consist of running the pumps until failure followed by replacement. The responsible facility owner shall maintain a replacement parts inventory that includes a spare pump.

2.5 Evaporation Pond

The evaporation pond will be inspected as identified in Appendix A. This inspection will consist of visual inspections of the liner and all perimeter areas. Inspections will also be conducted to evaluate the performance of the leak detection system. Additionally, inspections for sediment buildup will be conducted when the pond is empty or the depth of water in the pond is low. A more detailed description of the inspections is provided in the following sections.

2.5.1 Evaporation Pond Liner and Perimeter Areas

The liner at the perimeter of the pond will undergo a visual inspection for rips and tears, evidence of animal intrusion, weed growth (through the liner or around the perimeter), amount of tension on the liner, environmental degradation, and failure of the liner anchoring system (i.e., the liner pulling away from the pond edges). The perimeter fence, pond inlet, and outlets will also be inspected to assure they are in good condition and free of debris. Personnel floatation devices shall be maintained at the pond for potential rescue of personnel from the pond.

2.5.2 Evaporation Pond Leak Detection System

The leak detection system will undergo a visual inspection and a system check conducted during two consecutive days. On the first day, the pump, piping, and control switches will be checked to assure they are in proper working condition following the system check described in Appendix D. The date, time of day, totalizer reading, and approximate percent (%) of the pond's bottom covered by water (e.g., entire pond bottom cover with water is equal to 100% [1.00] covered). The following day, at approximately the same time, the totalizer reading will be noted. The previous day's totalizer reading will be subtracted from the current reading to obtain an estimate of a daily leakage volume. The daily leakage volume will then be divided by the percent of the pond's bottom that is covered by water. For example,

Day 1 Totalizer reading = 2,043.4 gal
Percent of pond bottom covered by water = 60%

Day 2 Totalizer reading = 2,168.7 gal

Leakage rate = (2,168.7 – 2,043.4)/0.6 = 208.8 gal.

The dimensions of the pond's bottom are 320 ft west-to-east by 243 ft north-to-south. These dimensions can be used to approximate the percent of the pond's bottom that is covered by water. The depth of the water is not important (as long as the bottom of the pond is completely covered by water, the percent used in the calculation is 100% (1.00). The inspector should estimate the percentage high to assure a conservative daily leakage volume.

The calculated leak rate will then be noted on the inspection form. The calculated leakage rate represents the volume of water per acre per day. If the leak rate is greater than 3,400 gal/acre/day, a corrective action plan and schedule will be developed to address the leakage.

Note: History of the 3,400-gal/acre/day leak rate: The approved design for the TFIA evaporation pond allowed for a leakage rate not to exceed 3,400 gal/acre/day, which is equivalent to a 1/8-in. (0.0104-ft) drop in the water level when the pond's bottom is fully covered. During the initial draft design, the evaporation pond did not have a sump and a pump for collecting and pumping any water that may have leaked through to the primary liner. The original thought was to measure evaporation/leakage using a graduated rod that would be placed down the bank of the pond. By knowing the evaporation rate based on climatic information, using the pan evaporation method nearby, and then measuring the water level on the rod, leakage and evaporation could be determined. The 1/8-in. value came from the assumption that it was the smallest difference in water elevation that could be measured using a graduated rod. Although the rod and pan evaporation method were replaced with a pump and sump, the 1/8-in. criterion continued to be used.

2.5.3 Sediment Assessment and Removal

Inspections of the pond inlet, outlets, and bottom (as applicable) will be conducted for sediment and debris. If sediments appear to be impeding flow into the pond or potential flow from the pond or if excessive sediment and/or debris have accumulated in the pond's bottom, maintenance actions will be scheduled for cleaning these areas in an expedient manner. Sediment and debris removal activities will be conducted on an as-needed basis, depending upon the inspections as discussed below.

If the pond is being drained for liner maintenance, sediment and/or debris removal, or removal of excessive storm water volumes, the sediment in the pond will be evaluated and removed if necessary as preventative maintenance. There are no outlets at an elevation deep enough to empty the pond; therefore, temporary pumps will be used to drain the pond when required. During pond drainage, the flow from the pumps will be managed to assure that the outflow is not eroding the drainageway carrying the flow from the pond. Prior to discharging this water or cleaning out the sediment, a plan will be developed, which will include water and sediment sampling, analysis, and removal by a pumping or vacuum system. Upon completion of sediment and water sampling and analysis, a waste determination will be performed and documented on a Waste Determination and Disposition Form (Form 435.39). Contaminated sediment and water that may not be discharged will be evaluated for management at the INEEL CERCLA Disposal Facility landfill and evaporation pond, respectively. If only minor volumes of sediment are found, it will be noted on the inspection form and sampling or removal activities of the sediment will not be performed.

2.6 Diverted Water to the Evaporation Pond

Nonhazardous, nonradiologically regulated waters discharged directly to the ground can contribute to the transport of contaminants to the perched water. Where possible, these waters will be diverted to the evaporation pond in lieu of being discharged to the ground and potentially contributing to the perched water in the proximity of the tank farm. Waters from specific, controlled systems can be directly diverted to the lined ditches without prior approval or notifications. These waters include raw water, fire water, potable water, demineralized water, and demineralized system backwash water. These plant waters would not have come into contact with radiologically controlled systems or hazardous waste.

Waters that have been in contact with the ground, collected in utility tunnels, are the result of line breaks and have collected in sumps and utility tunnels, or have otherwise potentially come into contact with contaminants shall undergo a one-time sampling event before the first transfer of this water to the TFIA drainage system can take place. The water will be sampled and assessed for chemical constituents potentially contaminating the water (e.g., volatile organic compounds, semivolatile organic compounds, and total metals and radionuclides). These analytical results and process knowledge will be used for a waste determination prior to discharge since the system is not designed to accept water that is a hazardous

waste or identified as radiologically regulated. This action will be performed for each new discharge prior to the initial discharge into the TFIA lined ditches.

The generator of diverted waters shall coordinate with Waste Generator Services to (a) determine what constituents could reasonably be present; (b) prepare the sampling plan, perform sampling, have the analysis performed; and (c) prepare the hazardous waste determination. All waters diverted to the TFIA evaporation pond shall be nonhazardous and nonradiologically controlled per Department of Energy (DOE) Order 5400.5. Upon completion of water sampling and analysis, a waste determination will be performed. Following completion of the Waste Determination and Disposition Form (Form 435.39) that documents that the water is nonhazardous and nonradiologically controlled, it may be discharged to the TFIA system.

3. ANNUAL OPERATIONS REPORT

An annual operations report for this system is prepared and submitted to the Environmental Protection Agency, Idaho Department of Environmental Quality, and Department of Energy Idaho Operations Office (DOE-Idaho). The report may include the following:

- A summary of the inspections performed, including evaporation pond monitoring data
- A summary of pond sediment sampling and analysis results for sediment to be removed
- A summary of maintenance activities performed
- Projected maintenance activities required for the next year
- A summary of any new source of discharge and sample results.

4. RESPONSIBILITIES

The individuals responsible for inspections, repairs, reporting, and notifications required for the Group 1 TFIA are specified below.

4.1 DOE-Idaho WAG 3 Project Manager

The DOE-Idaho, OU 3-13, remediation project manager is responsible for overseeing the implementation of this plan in accordance with the FFA/CO.

4.2 WAG 3 Manager

The WAG 3 manager is responsible for the following:

- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Agency interactions on O&M Plan content and implementation
- Submittal of documents to CERCLA Agencies such as the annual operations reports or revised O&M plans
- Revising and maintaining the O&M Plan
- Providing technical interpretations direction to facility owners on meeting O&M Plan requirements for inspections and maintenance activities and recordkeeping
- Receiving and recording inspection reports
- Annual report writing as required by this O&M Plan
- Assuring document control of O&M reports, including their placement in the project files and the CERCLA record files, as necessary.

4.3 Tank Farm Manager

The INTEC High Level Waste manager is the facility owner of the tank farm and has the responsibility for systems located within the tank farm. Specific responsibilities include

- Maintaining the TFIA components within the boundary of the tank farm in accordance with this O&M Plan
- Implementing inspections by using personnel familiar with the system as constructed and operated
- Implementing and coordinating preventative and repair maintenance activities
- Implementing follow-up inspections after repair or replacement activities
- Administrating subcontracts for performing required maintenance activities
- Maintaining a record of the maintenance activities performed

- Submitting inspection and maintenance records to the WAG 3 manager as documents are generated
- Submitting revisions to the O&M Plan, as needed, to the WAG 3 manager.

4.4 General INTEC Facility Manager

The INTEC tenant and support manager is the facility owner of all TFIA components that exist outside the tank farm boundary. This includes all lined ditches and culverts, the Olive Avenue lift station (CPP-1792), the 150-ft control zone around the tank farm, and the TFIA evaporation pond (CPP-1793, Pond-CW2-301). The TFIA components located outside the tank farm are the property of the tenant and support manager who shall maintain all these components per the requirements of this O&M Plan. Specific responsibilities include

- Implementing inspections by using personnel familiar with the system as constructed and operated
- Implementing and coordinating preventive and repair maintenance activities
- Implementing follow-up inspections after repair or replacement activities
- Administrating subcontracts for performing required maintenance activities
- Maintaining a record of all maintenance activities performed
- Submitting inspection and maintenance records to the WAG 3 manager as documents are generated
- Submitting revisions to the O&M Plan, as needed, to the WAG 3 manager
- Reviewing analytical data from sampled water to be discharged into the evaporation pond.

5. RECORDS

Inspection forms and system checklists shall be completed per the requirements of this plan. The originals of completed inspection forms, lists, and associated reports shall be transmitted to the WAG 3 manager who provides them to Records Management personnel. Records generated as a result of the implementation of this plan are maintained as CERCLA records in accordance with the FFA/CO (DOE-ID 1991).

6. REFERENCES

10 CFR 835.401, 2004, "General requirements," *Code of Federal Regulations,* Office of the Federal Register, January 2004. (as promulgated as of October 1999)

10 CFR 835.1102, 2004, "Control of areas," *Code of Federal Regulations,* Office of the Federal Register, January 2004. (as promulgated as of October 1999)

DOE, 2003, *United States Environmental Protection Agency, Idaho Department of Environmental Quality, United States Department of Energy, in the Matter of: the December 04, 2002, Notice of Violation and the December 20, 2002, Statement of Dispute, Agreement to Resolve Dispute*, U.S. Environmental Protection Agency, Idaho Department of Environmental Quality, U.S. Department of Energy, February 21, 2003.

DOE O 5400.5, Change 2, 1993, "Radiation Protection of the Public and the Environment," U.S. Department of Energy, January 1993.

DOE-ID, 1991, *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory,* Department of Energy Idaho Field Office, Environmental Protection Agency Region 10, State of Idaho Department of Health & Welfare, December 1991.

DOE-ID, 1999, *Final Record of Decision, Idaho Nuclear Technology and Engineering Center, Operable Unit 3-13,* DOE/ID-10660, Rev. 0, U.S. Department of Energy Idaho Operations Office, October 1999.

Form 435.39, 2000, "INEEL Waste Determination and Disposition Form," Rev. 4, Idaho National Engineering and Environmental Laboratory, March 2000.

PRD-183, 2005, "Radiological Control Manual," Rev. 8, Idaho National Engineering and Environmental Laboratory, March 2005.

Appendix A

Inspection Forms

INSPECTION FORM FOR COMPONENTS INSIDE THE TANK FARM PERIMETER[a]

Inspection Activity	Normal Condition	Off Spec Condition	Deficiency Description/Comments
1. Asphalt integrity – asphalt surfaces and asphalt curbing in good condition with no cracks, gaps adjacent to structures, breaks, or potholes that would cause leakage to the subsurface.	Yes	No	
2. Six-inch diameter corrugated metal pipe (CMP) and associated asphalt for each asphalt drainage location are intact without blockages or debris that would prevent water flow. Screen is in place.	Yes	No	
3. High-density polyethylene piping – (1) Seal between CMP and piping is intact. (2) Piping is intact, without blockages at the inflow or outflow. (3) Ballast tubes are in good condition and placed at 30-ft intervals along the high-density polyethylene piping and within 10 ft of discharge points. (4) Piping is placed to provide drainage from the asphalt-sealed areas to the ditches. (5) Drainpipe filter socks are in place and in good condition.	Yes	No	
4. Concrete-lined ditch and CMP – (1) Concrete is in good condition. (2) Ditch invert and CMP inlet and outlet are free of debris that would restrict drainage.	Yes	No	
5. Radiological controls – Are there new or additional radiological controls that have been identified?			

a. Inspections are to be performed monthly for the first 6 months of operation, then quarterly inspections are to be performed (once in the months of January through March, April through June, July through September, and October through December).

Inspector's Name (print) _____
Inspector's Signature _____
Date Inspection Completed_____
Inspection Completed: Supervisor's Signature _____
Repairs or Actions Completed or Not Required: Supervisor's Signature _____

Photographs taken (attached) ____Yes ____No

List of photographs taken____

Item No.	Action(s) Taken To Correct Problem(s) Found	Action Date	Completion Date	Supervisor's Initials

INSPECTION FORM FOR
STORM WATER COLLECTION SYSTEM OUTSIDE TANK FARM PERIMETER[a]

Inspection Activity	Normal Condition	Off Spec Condition	Deficiency Description/Comments
1. Concrete-lined ditch – (1) Concrete is in good condition. (2) Ditch and CMP inlets and outlets are free of debris and sediment that would restrict drainage. (3) CMPs are free of debris and sediment.	Yes	No	
2. TFIA–required asphalted areas are covered and in good condition (refer to Figure 1-1) (within the 150 ft control zone).	Yes	No	
3. Lift station. Perform the following: a. Inspect for mechanical and structural abnormalities in the lift station manhole, such as evidence of piping leakage, unusual buildup of rust or corrosion or ruptured housings. b. Inspect for manhole cover plate integrity and operation. c. Inspect for abnormal water level in pump sump. d. Inspect lift station power and control panels for correct settings and alarms. Identify any abnormal conditions, such as improper settings, precipitation infiltration, excessive rust, or corrosion. e. Attach copy of Utility Inspection Report Form.	Yes	No	
4. Radiological controls: Are there new or additional radiological controls that have been identified?			

a. Inspections are to be performed quarterly (once in the months of January through March, April through June, July through September, and October through December).

Inspector's Name (print) _____
Inspector's Signature _____
Date Inspection Completed_____
Inspection Completed: Supervisor's Signature _____
Repairs or Actions Completed or Not Required: Supervisor's Signature _____

Photographs taken (attached) ____Yes ____No

List of photographs taken____

Item No.	Action(s) Taken To Correct Problem(s) Found	Action Date	Completion Date	Supervisor's Initials

INSPECTION FORM
EVAPORATION POND LINER AND PERIMETER[a]

Inspection Activity	Normal Condition	Off Spec Condition	Deficiency Description/Comments
1. Liner integrity – Liner is free of rips and tears. No environmental degradation observed. No evidence of animal intrusion.	Yes	No	
2. Liner integrity – No visible vegetation piercing the liner. Liner not under excessive tension.	Yes	No	
3. Liner anchor – Liner anchors are in place and in good condition.	Yes	No	
4. Fencing – Chainlink fencing and gate in good condition. Lock is in place. Signage is in place.	Yes	No	
5. Sediment and debris – No excessive sediment or debris in pond bottom (i.e., covering the bottom).	Yes	No	
6. Inspect pond inlet and outlets for debris and sediment.	Yes	No	
7. Personal floatation/rescue devices are in place inside the fenced area.	Yes	No	
8. Radiological controls - No new or additional radiological controls have been identified.			

a. Inspections are to be performed quarterly (once in the months of January through March, April through June, July through September, and October through December).

Inspector's Name (print) _____
Inspector's Signature _____
Date Inspection Completed_____
Inspection Completed: Supervisor's Signature _____
Repairs or Actions Completed or Not Required: Supervisor's Signature _____

Photographs taken (attached) ____Yes ____No

List of photographs taken____

Item No.	Action(s) Taken To Correct Problem(s) Found	Action Date	Completion Date	Supervisor's Initials

INSPECTION FORM
EVAPORATION POND LEAK DETECTION SYSTEM[a]

Inspection Activity	Data	Inspection Date	Comments/Recommended Repair
1. Condition of control panel and sump pump components/area are normal.			
2. Record hour meter reading (hr).	hrs		
3. Record water level.	inches		
4. Percent of pond bottom covered by water (P) (as a decimal).			
5. Day 1 totalizer volume (V1).	gal		
6. Day 2 totalizer volume (V2).	gal		
7. Leak rate = (V2-V1)/P.	gal		

a. Inspections are to be performed on a quarterly basis (once in the months of January through March, April through June, July through September, and October through December).

Inspector's Name (print) _____
Inspector's Signature _____
Date Inspection Completed_____
Inspection Completed: Supervisor's Signature _____
Repairs or Actions Completed or Not Required: Supervisor's Signature _____

Photographs taken (attached) ____Yes ____No

List of photographs taken____

Item No.	Action(s) Taken To Correct Problem(s) Found	Action Date	Completion Date	Supervisor's Initials

Appendix B

Asphalt Classification System

Appendix B

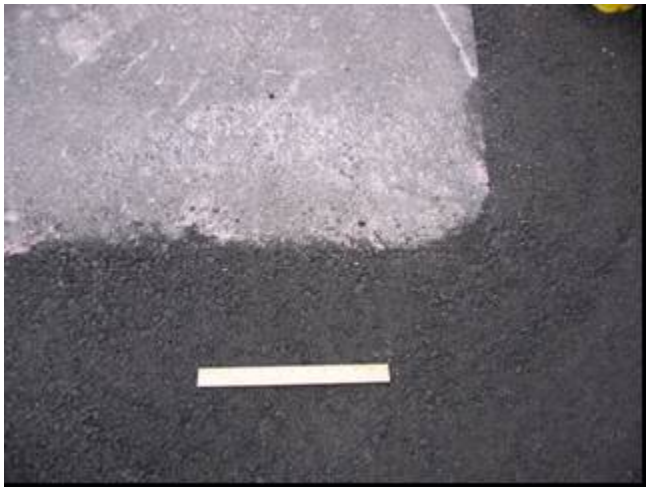
Asphalt Classification System

The following asphalt classification will be used during inspections of TFIA asphalted and surface-sealed areas to establish criteria for determining maintenance requirements. The classification system uses a numbering system from 0 to 4 that corresponds to the following:

- Asphalt Classification 0 – New asphalt free of cracks, defects, subsidence.
- Asphalt Classification 1 – Existing asphalt in good condition, maintenance not required.
- Asphalt Classification 2 – May contain minor cracks, slight uneven surface, and/or may contain areas that have previously been repaired. Requires regular inspections.
- Asphalt Classification 3 – Contains cracks, holes, subsidence that require repair. Deep-patterned cracks that extend through the surface and reach the subgrade and base material.
- Asphalt Classification 4 – Asphalt containing major defect(s), requires replacement.

Asphalt Classification 0 – New asphalt free of cracks, defects, subsidence.

Asphalt Classification 1 – Existing asphalt free from cracks, hole, defects, subsidence.



Asphalt Classification 2 – May contain minor cracks, slight uneven surface, and/or may contain areas that have previously been repaired. Requires regular inspections.

Asphalt Classification 3 – Contains cracks, holes, subsidence that require repair. Deep-patterned cracks that may extend through the surface and reach the subgrade and base material.

Asphalt Classification 4 - Asphalt containing major defect(s), requires replacement.

Appendix C

System Checks for Lift Station CPP-1792

System Checks for Lift Station CPP-1792

Copy this page and perform system checks using the list below. Check each item as accomplished. Sign and date the completed page.

___ 1. Verify seal failure indicator light bulbs are good for Pump 1 and Pump 2 (Figure C-1).

___ 2. Test the Main Alarm by pushing the test switch to verify alarm annunciates and rotating light on top of control panel lights (Figure C-2).

___ 3. Verify pump select switch (Pump 1/Alternate/Pump 2) switch is in the ALT position.

___ 4. Silence Main Alarm by pushing alarm silence switch to verify alarm resets.

___ 5. Verify both Pump 1 and 2 (Hand/Off/Auto) toggle switches are in Auto position (Figure C-3).

___ 6. Fill pump basin with water to 6-ft level; verify first pump starts and water level begins to drop.

___ 7. Check concrete ditch to verify water discharges as expected to concrete ditch. (East of Main Stack)

___ 8. Verify Ball Valve BWV-OGF-1 with electrical actuator closes when the pump starts, and valve opens when the pump stops.

___ 9. When water level begins to decrease, place (Hand/Off/Auto) toggle control switch in the Off position, on the Running pump as indicated by the pump run light.

___ 10. Place Pump 1 and Pump 2 (Hand/Off/Auto) toggle switches in the Off position.

___ 11. Fill pump basin with water to 8-ft level; verify High-level alarm is received.

___ 12. Return both pump (Hand/Off/Auto) toggle switches to the Auto position. Verify both pumps start.

___ 13. Allow pumps to run until water level drops below 6-ft level, shut down both pumps by placing “Hydromatic Pumps” hand switch in the Off position.

___ 14. Return “Hydromatic Pumps” hand switch to the On position. Pumps should remain off.

___ 15. Fill pump basin with water to the 6-ft level. Verify the alternate (second) pump starts this time.

___ 16. Verify pump runs until water level drops down to approximately 8 in. of water in basin and pump stops.

___ 17. Return both pumps to Auto operation by placing the (Hand/Off/Auto) toggle control switch in the Auto position.

___ 18. Verify pump select switch (Pump 1, Alternate, Pump 2) switch is in the ALT position.

Inspector’s Name (print) _____

Inspector’s Signature _____Date Inspection Completed_____

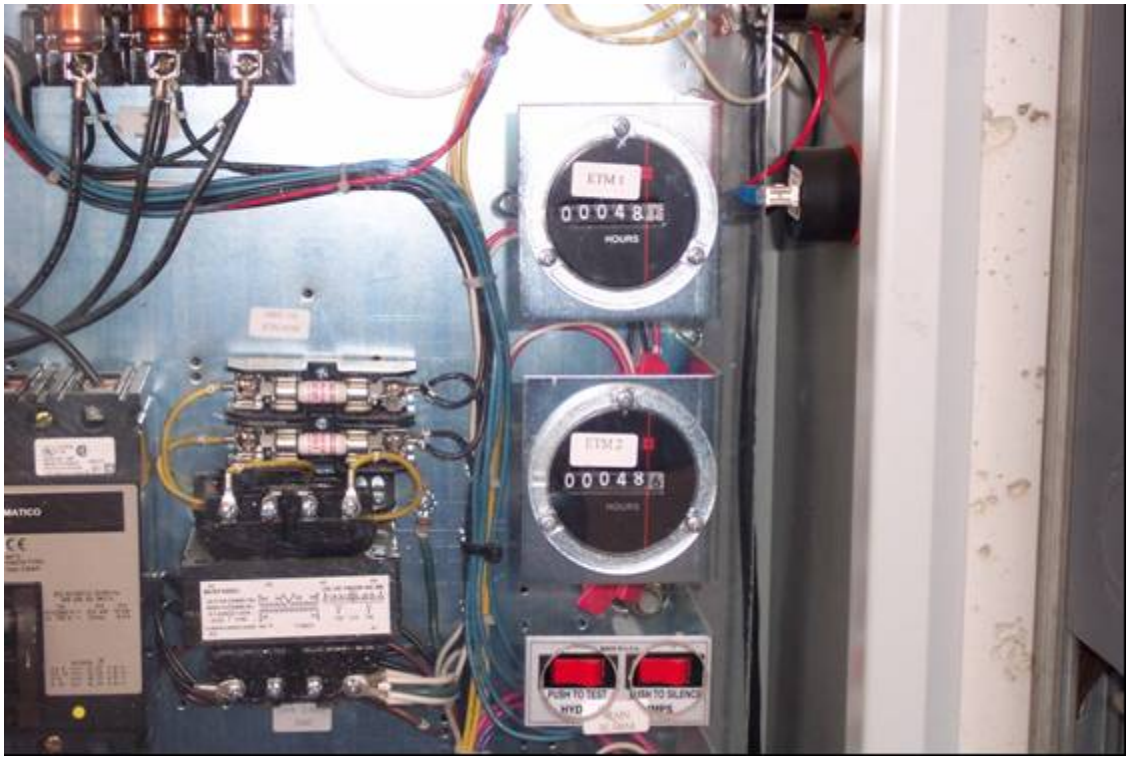


Figure C-1. Lift station seal failure indicator lights for Pump 1 and Pump 2.

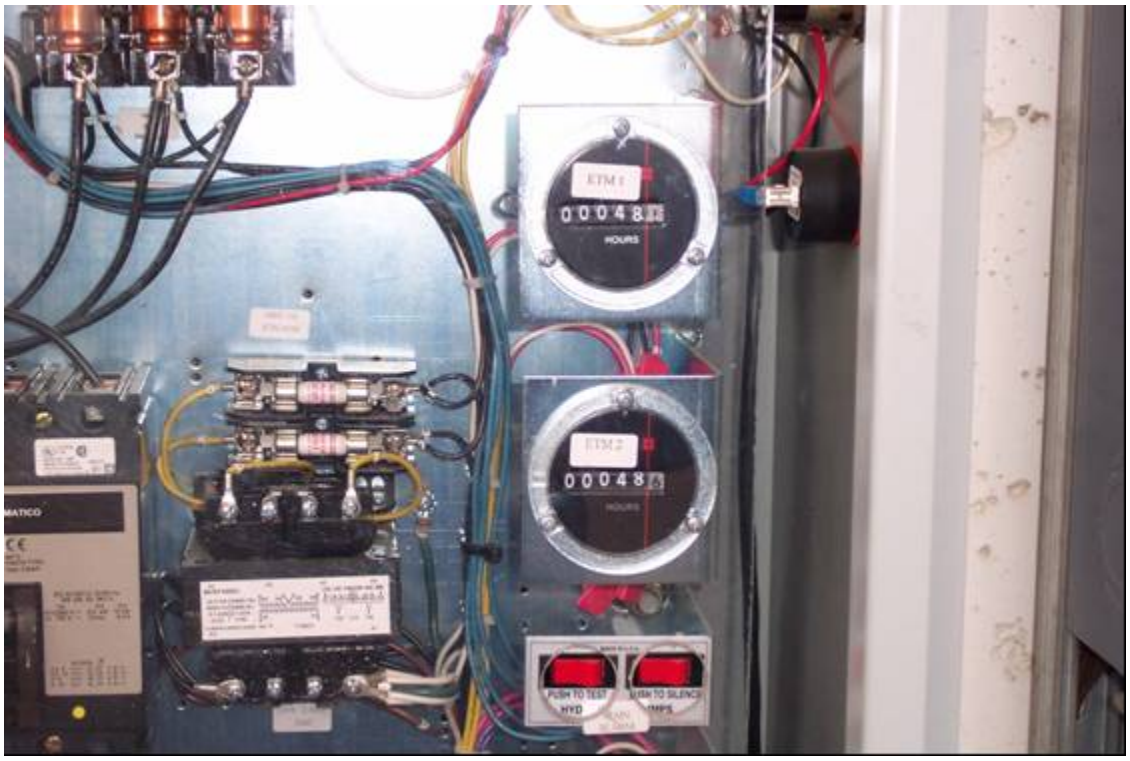


Figure C-2. Lift station main alarm controls and lift station hour meters.

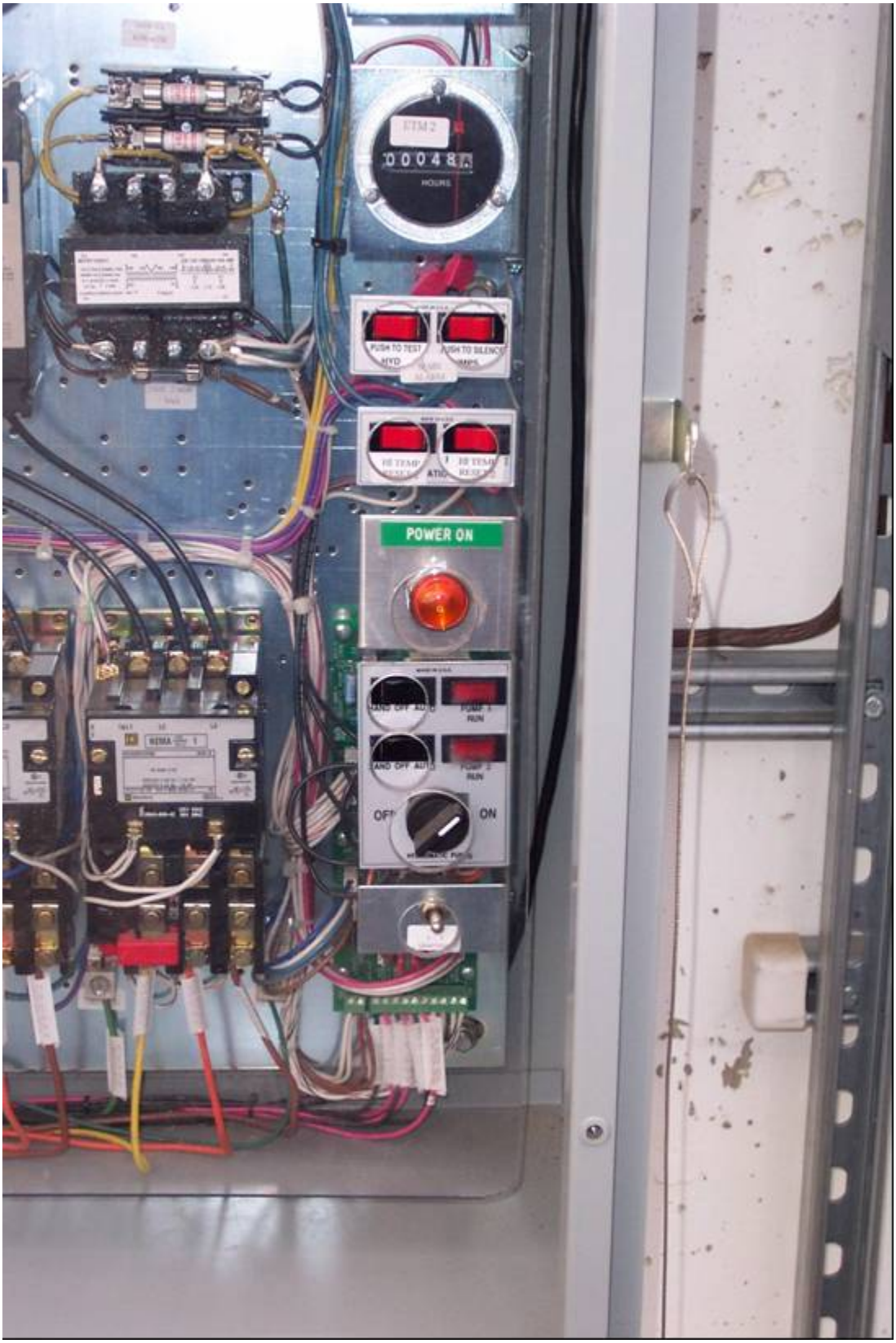


Figure C-3. Lift station pump control panel.

Appendix D

System Checks for Evaporation Pond Leak Detection Sump Pump and Controls

System Checks for Evaporation Pond
Leak Detection Sump Pump and Controls

Copy this page and perform system checks using the list below. Check each item as accomplished. Sign and date the completed page.

Caution:. Do not run the pump dry (observe the electronic water level reading).

___ 1. Verify the main disconnect switch is in the ON position (Figure D-1).

___ 2. Verify that the "Pump On" indicator light bulb (green lens cap) is good.

___ 3. Verify that the pump "Motor Overload Tripped" indicator light is off. Verify the light bulb is good (Figure D-2).

___ 4. Verify that the "High Level Alarm" indicator light is off, and then check to verify the light bulb is good (Figure D-2).

___ 5. Test the GFCI by pushing the test button. Verify that the GFCI trips. Press the reset and verify that the GFCI resets (Figure D-3).

___ 6. Verify that the heater in the panel works. The inside panel will need to be opened and the thermostat turned up to check that the heater warms. Return the thermostat to the correct setting (low or approximately 40^{o}F).

___ 7. Check the vent filter. It should be replaced when it is 85% spent. Do not remove the old filter until a new one is available. Note: The filter is filled with a desiccant that will turn pink as it removes moisture from the air. When it is approximately 85% pink, replace the filter.

___ 8. Verify that the pump "Hand/Off/Auto" switch is in the Auto position (Figure D-2).

Inspector's Name (print) _____

Inspector's Signature _____Date Inspection Completed_____

Figure D-1. Leak detection system sump pump control panel with main disconnect.

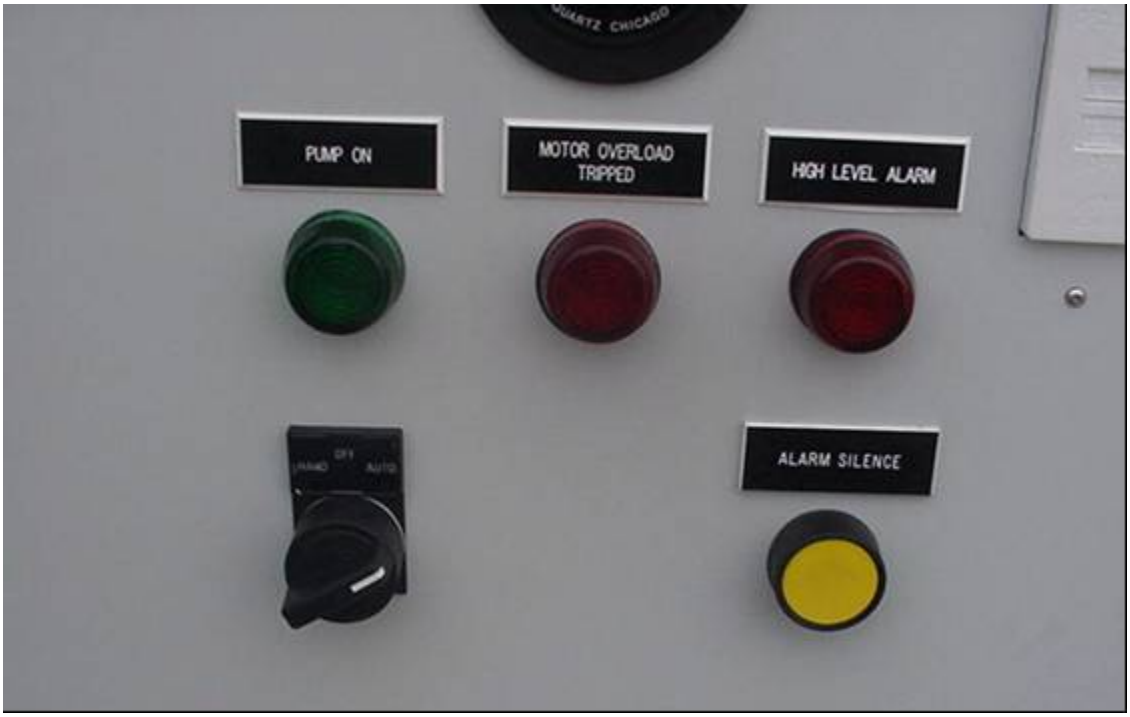


Figure D-2. Leak detection system pump controls.

Figure D-3. Inside control panel of leak detection system.